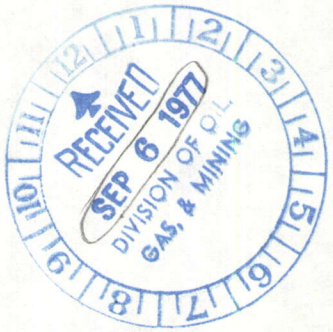
UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SEP 0 1 1977

Div. of Oil, Gas and Mining - Utah
Route to Brian for need to determine surety again based on increased cover and clay material



FCPF:RAS
Docket No. 40-8084

Rio Algom Corporation
ATTN: Mr. M. D. Lawton
Mine Manager
P. O. Box 610
Moab, Utah 84532

Gentlemen:

Enclosed is Source Material License No. SUA-1119 authorizing operations at your Humeca uranium mill located in LaSal County, Utah. This license is being issued subsequent to our receipt of an acceptable tailings area reclamation and site decommissioning program dated June 30, 1977, and confirmation by letter dated August 18, 1977, that provisions for surety arrangements covering this program have been initiated with the Utah Department of Natural Resources. Condition 28 requires that you complete surety arrangements for the reclamation program with the state of Utah by March 1, 1978. The upgraded tailings area reclamation program supplements the mitigating measures presented in the Final Environmental Statement related to the Humeca uranium mill dated April 1976 (NUREG-0046).

Condition 17 of the license authorizes you to continue to make allowance for the use of respiratory protective equipment subject to the conditions specified in the attached Annex A. As stated in the amendments to 10 CFR Part 20, Section 20.103, which became effective December 29, 1976, (41 FR 52300) a licensee who has previously been authorized to make allowance for respiratory protective equipment prior to December 29, 1976, as in your case, shall bring his respiratory protective program into conformance with the requirements of paragraph (c) of this section within one year of the effective date.

The conditions of this license were discussed in telephone conversations between your Messrs. M. D. Lawton and J. T. Burnett and Messrs. R. A. Scarano and E. A. Trager of my staff.

As you are aware, the Commission has initiated the preparation of a Generic Environmental Impact Statement (GEIS) on uranium milling. Please be advised that the conclusions of this GEIS, and any related

rulemaking, may result in new requirements concerning your mill waste generating processes and tailings management practices.

FOR THE NUCLEAR REGULATORY COMMISSION

Leland C. Rouse

Leland C. Rouse, Chief
Fuel Processing & Fabrication Branch
Division of Fuel Cycle and
Material Safety

Enclosure:
Source Material License
No. SUA-1119

U. S. NUCLEAR REGULATORY COMMISSION
MATERIALS LICENSE

COPY

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. Rio Algom Corporation	3. License number SUA-1119
2. Post Office Box 610 Moab, Utah 84532	4. Expiration date September 30, 1982
	5. Docket or Reference No. 40-8084

6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
Natural Uranium	Any	Unlimited

9. Authorized Place of Use: The licensee's Humeca Mill site located approximately four miles south of La Sal, Utah.

10. For use in accordance with statements, representations, and conditions contained in licensee's application dated August 26, 1971 and supplements dated February 16, 1972, November 27, 1974, January 28, 1975, August 6, 1976 and November 18, 1976.

11. Nominal mill throughput shall be 750 tons of uranium bearing ore per day, as averaged annually.

12. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the mill provided that all entrances to the mill are conspicuously posted in accordance with Section 20.203(e)(2), and with words, "Any area within this mill may contain radioactive material."

13. Changes in the mill circuit, as illustrated and described in Figure 18 of the final environmental statement related to the operation of the Humeca Uranium Mill (NUREG-0046 dated April 1976), shall require approval by the US NRC in the form of a license amendment.

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14. The licensee shall require yellowcake operators and yellowcake maintenance operators to shower at the end of the shift. In addition, a portable alpha monitor shall be available for personnel surveillance upon request.

15. Surface contamination in the lunch room, change room and office area shall be determined by a wipe test on a monthly frequency. If contamination levels exceed the values in the attached Annex B, dated November, 1976, the area shall be decontaminated immediately and a study performed to determine the cause of buildup and corrective measures taken to prevent recurrence.

16. Release of equipment or packages from the restricted area shall be in accordance with the attached Annex B, dated November, 1976.

17. Pursuant to subparagraphs 20.103(c)(1) and (3), 10 CFR 20, the licensee is hereby authorized to make allowance for the use of respiratory equipment in determining whether individuals in restricted areas are exposed to concentrations of airborne radioactive materials in excess of the limits specified in Appendix B, Table 1, Column 1, 10 CFR 20, subject to the conditions specified in the attached Annex A.

18. The licensee shall maintain an operational environmental monitoring program in accordance with Section II.E.2 of NUREG-0046 dated April, 1976. In addition, stack and downwind environmental samples shall be analyzed for Thorium 230 and Radium 226 on a semiannual frequency.

19. If unexpected harmful effects or evidence of irreversible damage not otherwise identified in NUREG-0046, dated April 1976, are detected during operations, the licensee shall provide to the US NRC an acceptable analysis of the problem and a plan of action to eliminate or significantly reduce the harmful effects or damage.

20. Mill tailings shall not be transferred from the site without specific prior approval of the US NRC obtained through amendment of this license.

21. Maximum elevation of the upper tailings pond shall be 6675 feet, thereby assuring 5 feet freeboard.

22. The licensee shall conduct and document at least one inspection of the tailings embankments per day and shall immediately notify Region IV, US NRC, Office of Inspection and Enforcement, Arlington, Texas, by telephone and telegraph, of any failure in the dam retention system which results in a release of radioactive material into unrestricted areas. This requirement is in addition to the requirements of 10 CFR 20.

MATERIALS LICENSE

Supplementary Sheet

License Number SUA-1119

Docket or
Reference No. 40-8084

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23. The licensee shall minimize the dusting of dried tailings, as necessary, by the installation of a sprinkler system, chemical stabilization, covering with soil, or other equivalent means.

24. The licensee shall control fugitive dust from the ore piles, as necessary, by water sprinkling or other dust suppression techniques.

25. The tailings impoundment area shall not be expanded by raising the height of the present dams or constructing a new dam without specific prior approval of the US NRC obtained through amendment of this license.

26. The discharge of mill tailings sand and slimes to the lower tailings pond is prohibited without specific prior approval of the US NRC obtained through amendment of this license.

27. The licensee shall develop and implement within 30 days of the date of issuance of this license a positive means of assuring that a minimum of two and one-half feet of freeboard is maintained between the top of the lower tailings pond dam and the level of the liquid in the pond.

28. The licensee shall reclaim the Humeca Mill tailings impoundment area in accordance with the program submitted by letter dated June 30, 1977. In addition, the licensee shall complete surety arrangements for the reclamation program with the State of Utah, Department of Natural Resources, initiated by a request to the State of Utah dated June 24, 1977. Surety arrangements shall be completed by March 1, 1978.

29. The licensee shall decommission the mill site in conformance with their submittal dated June 30, 1977 and Annex B, dated November, 1976 (enclosed). Decommissioning costs shall be included in the surety arrangements provided to the State of Utah in conformance with License Condition 28, above.

30. The results of sampling, analyses, surveys and monitoring, the results of calibration of equipment, reports on audits and inspections, and all meetings and training courses committed to in the licensee's application and supplements and in the additional conditions to this license, as well as any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in US NRC regulations, all such documentation shall be maintained for a period of at least five years.

31. Documented visual checks of dust control systems and attendant static pressure gauges shall be performed every operating shift.

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For the U. S. Nuclear Regulatory Commission

Date SEP 0 1 1977

by Leland C. Rouse

Division of Fuel Cycle and
Material Safety
Washington, D.C. 20555

ANNEX A

CONDITIONS FOR USE OF RESPIRATORY PROTECTIVE EQUIPMENT

1. In circumstances in which adequate limitation of the inhalation of radioactive materials by use of process or other engineering controls is impracticable, the licensee may permit an individual in a restricted area to be exposed to average concentrations of airborne radioactive materials in excess of the limits specified in Appendix B, Table 1, Column 1 of 10 CFR 20 provided:

   A. The individual uses respiratory or other appropriate protective equipment such that the total intake, in any period of seven consecutive days by inhalation, ingestion or absorption, would not exceed that intake which would result from breathing the concentrations specified in Appendix B, Table 1, Column 1 of 10 CFR 20 for a period of 40 hours.

   B. The licensee shall advise each respirator user that he may leave the area for relief from respiratory use in case of equipment malfunction, physical or psychological discomfort, or any other condition that might cause reduction in the protection afforded the wearer.

   C. The licensee maintains a respiratory protective program adequate to assure that the objective of Item "A" above is met. Such program shall include:

      (i) Air sampling and other surveys sufficient to identify the hazard, to evaluate individual exposure, and to permit proper selection of the respiratory protective equipment;

      (ii) Procedures to assure proper selection, supervision and adequate training of personnel using such protective equipment;

      (iii) Procedures to assure the adequate fitting of respirators, and the testing of equipment for operability.

      (iv) Procedures for maintenance to assure full effectiveness of respiratory protective equipment, including issuance, cleaning and decontamination, inspection, repair, and storage;

(v) Bioassays of individuals and other surveys as may be appropriate to evaluate individual exposures and to assess protection actually provided; and

(vi) Records sufficient to permit periodic evaluation of the adequacy of the respiratory protective program.

D. The licensee has evaluated the protective equipment[1/] and has determined that, when used to protect against radioactive material under the conditions of use to be encountered such equipment is capable of providing a degree of protection at least equal to the protection factors listed in Table I attached hereto.[2/]

2. The licensee shall notify, in writing, the Director of the appropriate NRC Inspection and Enforcement Office listed in Appendix D, 10 CFR 20, when the respiratory protection program is initiated. Such notification shall be made within thirty (30) days after the date that allowance for the use of respiratory protective equipment is first made.

3. The licensee shall not assign protection factors in excess of those given in Table I attached hereto in selecting equipment.

1/ In evaluating respiratory protective equipment for use against radioactive materials to assure that the equipment provides the protection factors listed in the attached Table I, the licensee may accept equipment approved under appropriate test schedules of the U. S. Bureau of Mines to the extent pertinent.

2/ The factors listed apply only to protection against radioactive materials. Additional precautions may have to be taken to protect against concurrent nonradiation hazards.

TABLE I

PROTECTION FACTORS FOR RESPIRATORS

Description	Modes[1]	PROTECTION FACTORS[2] Particulates and Vapors and Gases Except Tritium Oxide[3]	Tritium Oxide
I. AIR-PURIFYING RESPIRATORS			
Facepiece, half-mask	NP	10	1
Facepiece, full	NP	100	1
II. ATMOSPHERE-SUPPLYING RESPIRATOR			
1. Air-line respirator			
Facepiece, half-mask	CF	100	2
Facepiece, half-mask	D	100	2
Facepiece, full	CF	1000	2
Facepiece, full	D	500	2
Facepiece, full	PD	1000	2
Hood	CF	1000	2
Suit	CF	[4]	[4]
2. Self-contained breathing apparatus (SCBA)			
Facepiece, full	D	500	2
Facepiece, full	PD	1000	2
Facepiece, full	R	1000	2
3. Combination respirator			
Any combination of air-purifying and atmosphere supplying respirator.		Protection factor for type and mode of operation as listed above.	

1/ CF: continuous flow
D : demand
NP: negative pressure (i.e., negative phase during inhalation)
PD: pressure demand (i.e., always positive pressure)
R : recirculating (i.e., negative phase during inhalation)

2/ (a) For purposes of this authorization the protection factor is a measure of the degree of protection afforded by a respirator, defined as the ratio of the concentration of airborne radioactive material outside the respiratory protective equipment to that inside the equipment (usually inside the facepiece) under conditions of use. It is applied to the airborne concentration to determine the concentration inhaled by the wearer, according to the following formula:

$$\text{Concentration Inhaled} = \frac{\text{Airborne Concentration}}{\text{Protection Factor}}$$

(b) The protection factors apply:

(i) only for individually fitted respirators worn by trained individuals and used and maintained under supervision in a well-planned respiratory protection program.

(ii) for air purifying respirators only when high efficiency particulate filters and/or sorbents appropriate to the hazard are used.

(iii) for atmosphere supplying respirators only when supplied with adequate respirable air.

3/ Excluding radioactive contaminants that present an absorption or submersion hazard.

4/ Appropriate protection factors must be determined taking account of the permeability of the suit to the contaminant under conditions of use. No protection factor greater than 1000 shall be used except as authorized by the Commission.

NOTE 1: Protection factors for respirators as may be approved in the future by the U. S. Bureau of Mines according to approval schedules for respirators to protect against airborne radionuclides may be used in lieu of the protection factors listed in this Table. Where additional respiratory hazards other than radioactive ones are present, especially those immediately dangerous to life, the selection and use of respirators shall also be governed by the approval of the U. S. Bureau of Mines in accordance with their applicable schedules.

NOTE 2: Radioactive contaminants for which the concentration values in Appendix B, Table I of 10 CFR Part 20 are based on internal dose due to inhalation may, in addition, present external exposure hazards at higher concentrations.

ANNEX B

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

U. S. Nuclear Regulatory Commission
Division of Fuel Cycle and
Material Safety
Washington, D.C. 20555

NOVEMBER 1976

The instructions in this guide in conjunction with Table I specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use. The limits in Table I do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control will be considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Table I prior to applying the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Table I. A copy of the survey report shall be filed with the Division of Fuel Cycle and Material Safety, USNRC, Washington, D.C. 20555, and also the Director of the Regional Office of the Office of Inspection and Enforcement, USNRC, having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

   a. Identify the premises.

   b. Show that reasonable effort has been made to eliminate residual contamination.

   c. Describe the scope of the survey and general procedures followed.

   d. State the findings of the survey in units specified in the instruction.

Following review of the report, the NRC will consider visiting the facilities to confirm the survey.

TABLE I

ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES [a]	AVERAGE [b c f]	MAXIMUM [b d f]	REMOVABLE [b e f]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm^2	3,000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except SR-90 and others noted above.	5,000 dpm $\beta\gamma$/100 cm^2	15,000 dpm $\beta\gamma$/100 cm^2	1,000 dpm $\beta\gamma$/100 cm^2

[a] Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c] Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e]The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f]The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.